

REMARKS

Claims 1-8 are pending for further examination, of which, claims 1, 3 and 7 are written in independent form. Claim 1, for example, recites a PWM drive circuit that includes a load driving field-effect transistor, a through rate control portion and a gate voltage control portion. Examples of these features are illustrated in FIG. 1.

As recited by claim 1, the gate voltage control portion stops an operation of the through rate control portion and adjusts the gate potential of the load driving FET upon detecting that the output voltage of the FET changes in a specified way during a transition period of the FET's gate voltage. Thus, the gate voltage portion not only adjusts the gate potential, but also detects when the adjustment should take place by analyzing the output voltage of the FET.

Rejections under 35 U.S.C. §§ 102-103

The Office rejected claims, as follows:

1. The Office rejected claims 1, 2, 3, 4, 7 and 8 as anticipated by US Patent No. 6,885,225 (Ohmichi et al.).¹
2. The Office rejected claims 5 and 6 as unpatentable over US Patent No. 6,885,225 (Ohmichi et al.) in view of US Patent No. 7,362,061 (Yasohara et al.).

In view of the following remarks, applicant respectfully requests reconsideration.

¹ The Office action actually states that claims 1-8 are rejected under 35 U.S.C. § 102(e) as anticipated by Ohmichi et al. (U.S. Patent No 6,885,225) but the detailed explanation rejects only claims 1, 2, 3, 4, 7 and 8 as anticipated. Claims 5 and 6 are rejected under 35 U.S.C. § 103(a) for obviousness.

The Ohmichi et al. patent discloses a drive circuit which includes a totem-pole output stage, a power supply voltage boosting power supply circuit and a pre-drive circuit that consists of a top arm driver and a bottom arm driver, as illustrated in FIG. 5.

Regarding independent claim 1, the Office action asserts that the Ohmichi et al. patent discloses a top arm driver, which the Office action appears to allege corresponds to the claimed gate voltage control. (Office action at p. 2) As explained above, claim 1 recites a gate voltage control portion which not only adjusts the gate potential of the load driving field-effect transistor, but also detects when the adjustment is to be made based on the output voltage of the load driving field-effect transistor.

In contrast, the top arm driver disclosed in the Ohmichi et al. patent does not disclose the foregoing feature recited in claim 1. The top arm driver connects one voltage booster circuit to another voltage booster circuit and a power supply such that the voltage output "is the sum of the first boosted voltage and the first supply voltage." (Ohmichi et al. patent, col. 42:37-41) This functionality simply sums one boosted voltage to one supply voltage and provides the summed result as an output. There is no disclosure of a gate voltage control portion configured to operate as recited in claim 1. In particular, the Ohmichi et al. patent does not disclose a feature which adjusts the gate potential "upon detecting [...] that an output voltage of the load driving field-effect transistor has almost been inverted and become approximately equal to a value obtained when the load driving field-effect transistor is completely on."

Independent claims 3 and 7 recite features similar to claim 1 and should be patentable at least for the same reason.

The foregoing feature also is not disclosed elsewhere in the Ohmichi et al. patent. The Office action appears to allege that the detection and adjustment features of the gate voltage control portion recited in the dependent claims 2, 4 and 8 correspond to the CLK Controller and Boosted Power Supply Voltage Monitor as disclosed in the Ohmichi et al. patent (col. 27:34-53). However, the CLK Controller and Boosted Power Supply Voltage Monitor is not included in the top arm driver which the Office action alleges corresponds to the gate voltage control portion. (See Ohmichi et al. patent, Fig. 30) Therefore, the Ohmichi et al. patent does not disclose each and every feature of claims 1, 3 and 7 or their dependent claims.

Furthermore, the Yasohara et al. patent does not disclose or render obvious the features missing from the Ohmichi et al. patent.

Conclusion

It is believed that all of the pending claims have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper.

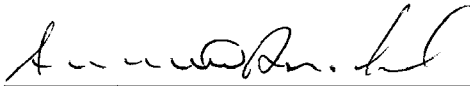
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Page : 9 of 9

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Respectfully submitted,

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